

## CLAIMS

What is claimed is:

1 1. A method for creating a supplier rating matrix for rating services of a supplier, the method  
2 comprising:

3 defining a plurality of job attributes each including a plurality of sub-attributes, each  
4 sub-attribute representing a range of job attribute values;

5 defining a job attribute vector, the job attribute vector including a plurality of  
6 dimensions each corresponding to a sub-attribute;

7 defining a plurality of performance metrics;

8 defining a performance vector, the performance vector including a plurality of  
9 dimensions each corresponding to a performance metric;

10 defining a first initial value for the job attribute vector;

11 defining a second initial value for the performance vector; and

12 generating a supplier-rating matrix for the supplier by mathematically combining the  
13 job attribute vector and the performance vector.

1 2. The method of claim 1 wherein the job attribute vector is a first job attribute vector, the  
2 performance vector is a first performance vector and the supplier rating matrix is a first  
3 supplier rating matrix further comprising;

4 receiving data associated with a specific service supplied to a customer of the supplier;

5 generating a second performance vector in response to the received data;

6 generating a second job attribute vector in response to the specific service, the second  
7 job attribute vector indicating which range of job attribute values are associated with the  
8 specific service;

9 defining a weighting factor; and

10 generating a second supplier-rating matrix for the supplier by mathematically  
11 combining the first supplier rating matrix, the weighting factor, the second job attribute vector  
12 and the second performance vector.

1 3. The method of claim 2 wherein the step of generating the second supplier rating matrix  
2 further comprises:

3 multiplying the second job attribute vector by the second performance vector, thereby  
4 generating a third supplier rating matrix ;

5 multiplying the first supplier-rating matrix by the weighting factor, thereby generating  
6 a fourth supplier rating matrix;

7 multiplying the third supplier rating matrix by the difference of one minus the  
8 weighting factor, thereby generating a fifth supplier rating matrix; and

9 adding the fourth supplier-rating matrix to the fifth supplier-rating matrix, thereby  
10 generating the second supplier-rating matrix.

1 4. The method of claim 1 wherein the job attribute vector is a first job attribute vector, the  
2 performance vector is a first performance vector, the supplier-rating matrix is a first supplier  
3 rating matrix and the supplier is a first supplier further comprising:

4 providing a second supplier-rating matrix associated with a second supplier;

5 receiving data associated with a proposed job;

6 generating a second performance vector in response to the received data;

generating a second job attribute vector in response to the received data, the second job attribute vector indicating which range of job attribute values are associated with the proposed job; and

selecting the first or second supplier based on the first supplier-rating matrix, the second supplier-rating matrix, the second performance vector and the second job attribute vector.

5. The method of claim 1 wherein the job attribute vector is a first job attribute vector and the performance vector is a first performance vector further comprising:

receiving data associated with a proposed job;

generating a second performance vector in response to the received data;

generating a second job attribute vector in response to the received data, the second job attribute vector indicating which range of job attribute values are associated with the proposed job; and

rating the supplier based on the supplier-rating matrix, the second performance vector and the second job attribute vector.

6. The method of claim 1 further comprising defining the plurality of job attributes and the plurality of sub-attributes using a technical requirements specification of a customer of a supplier.

7. The method of claim 1 further comprising defining the plurality of job attributes to include dimensional tolerance, turnaround time and quantity.

8. The method of claim 7 further comprising :

defining the plurality of sub-attributes corresponding to the dimensional tolerance attribute to include a plurality of ranges of tolerance values;

4 defining the plurality of sub-attributes corresponding to the quantity attribute to  
5 include a plurality of ranges of quantity values; and

6 defining the plurality of sub-attributes corresponding to the turnaround time attribute  
7 to include a plurality of ranges of times.

1 9. The method of claim 1 further comprising defining the plurality of performance metrics to  
2 include speed, quality, cost and service.

1 10. The method of claim 1 wherein the supplier rating matrix includes a number of columns  
2 and a number of rows wherein the step of generating further comprises multiplying the job  
3 attribute vector by the performance vector, resulting in the supplier rating matrix including the  
4 number of columns corresponding to the number of dimensions of the job attribute vector and  
5 the number of rows corresponding to the number of dimensions of the performance vector.

1 11. A system for creating a supplier rating matrix for rating services of a supplier, the system  
2 comprising:

3 an interface module adapted to define a plurality of job attributes each including a  
4 plurality of sub-attributes, each sub-attribute representing a range of job attribute values and  
5 adapted to define a plurality of performance metrics; and

6 a matrix generator module adapted to define a job attribute vector with an initial value,  
7 the job attribute vector including a plurality of dimensions each corresponding to a sub-  
8 attribute, adapted to define a performance vector with an initial value, the performance vector  
9 including a plurality of dimensions each corresponding to a performance metric, and adapted  
10 to generate a first supplier rating matrix for the supplier by mathematically combining the job  
11 attribute vector and the performance vector.

1 12. The system of claim 11 wherein the job attribute vector is a first job attribute vector, the  
2 performance vector is a first performance vector and the supplier rating matrix is a first  
3 supplier rating matrix further comprising:  
4 the interface module further adapted to receive data associated with a specific service  
5 supplied to a customer of the supplier;  
6 the matrix generator module further adapted to define a weighting factor, adapted to  
7 generate a second performance vector in response to the received data, adapted to generate a  
8 second job attribute vector in response to the specific service that indicates which range of job  
9 attribute values are associated with the specific service and adapted to generate a second  
10 supplier rating matrix for the supplier by mathematically combining the first supplier rating  
11 matrix, the weighting factor, the second job attribute vector and the second performance  
12 vector.

1 13. The system of claim 11 wherein the job attribute vector is a first job attribute vector, the  
2 performance vector is a first performance vector, the supplier rating matrix is a first supplier  
3 rating matrix and the supplier is a first supplier further comprising:  
4 the matrix generator module further adapter to provide a second supplier-rating matrix  
5 associated with a second supplier;  
6 an interface module adapted to receive data associated with a proposed job;  
7 a selector module adapted to generate a second performance vector in response to the  
8 received data, adapted to generate a second job attribute vector in response to the received  
9 data, the second job attribute vector indicating which range of job attribute values are  
10 associated with the proposed job and adapted to select the first or second supplier based on

the first supplier matrix, the second supplier matrix, the second performance vector and the second job attribute vector.

14. The system of claim 11 further comprising a server in communication with a client via a network, wherein the server includes the interface module and the matrix generator module.

15. An article of manufacture having computer-readable program means for creating a supplier rating matrix for rating services of a supplier, the article comprising:

computer-readable program means for defining a plurality of job attributes each including a plurality of sub-attributes, each sub-attribute representing a range of job attribute values;

computer-readable program means for defining a job attribute vector associated with the supplier, the job attribute vector including a plurality of dimensions each corresponding to a sub-attribute;

computer-readable program means for defining a plurality of performance metrics;

computer-readable program means for defining a performance vector associated with the supplier, the performance vector including a plurality of dimensions each corresponding to a performance metric;

computer-readable program means for defining a first initial value for the job attribute vector;

computer-readable program means for defining a second initial value for the performance vector; and

computer-readable program means generating a supplier rating matrix for the supplier by mathematically combining the job attribute vector and the performance vector.

16. The article of claim 15 wherein the job attribute vector is a first job attribute vector, the performance vector is a first performance vector and the supplier rating matrix is a first supplier rating matrix further comprising;

computer-readable program means for receiving data from a customer of the supplier associated with a specific service supplied by the supplier to the customer;

computer-readable program means for generating a second performance vector in response to the data received by the customer;

computer-readable program means for generating a second job attribute vector in response to the specific service, the second job attribute vector indicating which range of job attribute values are associated with the specific service;

computer-readable program means for defining a weighting factor; and

computer-readable program means for generating a second supplier rating matrix for the supplier by mathematically combining the first supplier rating matrix, the weighting factor, the second job attribute vector and the second performance vector.

17. The method of claim 15 wherein the job attribute vector is a first job attribute vector, the performance vector is a first performance vector, the supplier rating matrix is a first supplier rating matrix and the supplier is a first supplier further comprising:

computer-readable program means for providing a second supplier-rating matrix associated with a second supplier;

computer-readable program means for receiving data from a user;

computer-readable program means for generating a second performance vector in response to the data received from the user;

computer-readable program means for generating a second job attribute vector in response to the data received from the user, the second job attribute vector indicating which range of job attribute values are associated with a specific service requested by the user; and computer-readable program means for selecting the first or second supplier based on the first supplier matrix, the second supplier matrix, the second performance vector and the second job attribute vector.

18. A method for selecting a supplier for a proposed job by evaluating a plurality of suppliers based on each of the supplier's performance metrics ratings for one or more previous jobs with corresponding job attributes, the method comprising:

defining a plurality of supplier-rating matrices, each supplier-rating matrix for each of the suppliers having at least two dimensions, the first dimension corresponding to a plurality of job attributes and the second dimension corresponding to a plurality of performance metrics;

generating a modified supplier-rating matrix for each of the suppliers by modifying one of the supplier-rating matrices corresponding to that supplier using job attributes and performance metrics associated with a given previous job performed by that supplier;

generating a rating value for each supplier using the modified supplier-rating matrices and the job attributes of the proposed job; and

selecting a supplier with the highest rating value.